

filtering the measured shunt capacitances.

Claim 4 (Original): The method of claim 3, wherein said filtering comprises the steps of:

discarding invalid measured shunt capacitance values which vary by greater than the predetermined value; and

determining whether a number of remaining measured shunt capacitance values is greater than a pre-defined number; and

returning to the step of measuring shunt capacitances of the transducer, if the number of remaining measured shunt capacitance values is less than the pre-defined number.

Claim 5 (Original): The method of claim 4, wherein the pre-defined number is 3.

Claim 6 (Original): The method of claim 2, wherein the predefined frequency range is from approximately 34 kHz to 44 kHz.

Claim 7 (Original): The method of claim 2, wherein the pre-defined frequency range is set such that non-resonant frequencies are located in the predefined frequency range.

Claim 8 (Original): The method of claim 2, wherein said measuring step comprises the step of:

measuring shunt capacitances at several different frequencies within and spaced along the predefined frequency range.

computing a hand piece average shunt capacitance;

incrementing the drive signal by a set frequency value;

determining whether ~~one of~~ the drive frequency is greater than a pre-set frequency
~~and or whether~~ a number of impedance measurements is ~~less~~ greater than a pre-defined number; and

if the result of the determining step is positive, computing an average shunt
capacitance value at each drive frequency.

Claim 13 (Original): The method of claim 12, further comprising the step of:

incrementing the drive signal by the set frequency value, if the absolute value of the
hand piece phase difference is greater than the predetermined value; and

returning to the step of measuring the hand piece impedance.

Claim 14 (Original): The method of claim 13, wherein the set frequency value is 25 Hz and the
predetermined value is 89.5°.

Claim 15 (Original): The method of claim 12, wherein the predefined frequency range is from
approximately 34 kHz to 44 kHz.

Claim 16 (Original): The method of claim 12, further comprising the step of:

performing a calculation to determine whether the hand piece is within acceptable
temperature limits; and

generator which represents a transducer tuning inductor, C_c is a capacitance of a hand piece cable and C_{pcb} is a contribution of capacitance from a printed circuit board in the generator.

Claim 31 (Original): The method of claim 26, wherein the group of distinct impedance values comprises eleven impedance values.

Claim 32 (Original): The method of claim 26, wherein the equally spaced frequency values are spaced apart at 1000 Hz intervals.